

WHAT IS CLAIMED IS:

1                   1.       A method for transmitting a data packet, with data to be transmitted  
2   in said packet supplied from a data source, said method comprising the steps of:  
3                    requesting a buffer to store data to be transmitted;  
4                    upon starting packet transmission, configuring said buffer as a FIFO  
5   buffer;  
6                    while said buffer is configured as a FIFO:  
7                        storing data supplied by the data source;  
8                        outputting transmit data to be transmitted in said packet;  
9                        asserting a valid signal when data to be transmitted is stored in the  
10   buffer;  
11                    starting a data-under-run timer set to a timeout interval if the valid signal is  
12   not asserted;  
13                    abandoning packet transmission if the under-run timer times out because  
14   the valid signal is not reasserted prior to the time out interval;  
15                    if the packet transmission is abandoned, reconfiguring said buffer as a  
16   STORE-AND-FORWARD buffer to store all data to be transmitted provided by said data  
17   source prior to outputting data to be transmitted in a packet; and  
18                    restarting packet transmission subsequent to storing all data to be  
19   transmitted in said buffer.

1                   2.       The method of claim 1 where said step of abandoning further  
2   comprises the act of:  
3                    terminating a packet with a special symbol indicating that the packet is not  
4   to be processed or reported in error by intermediate routing nodes or its destination.

1                   3.       A system for implementing a speculative transmit function  
2   comprising:  
3                    a session block which responds to packet transmit requests and includes  
4   logic for requesting a logical buffer to buffer a transmit packet, for writing data to the  
5   logical buffer, and for sending a START signal to begin packet transmission;  
6                    a logical buffer;

9 configuration logic responsive to said START signal to configure the logical buffer as  
10 FIFO buffer, and asserting a DATA\_VALID signal when data has been loaded into the  
11 logical buffer and is ready to transmit, and responsive to an ABANDON signal to  
12 configure the logical buffer as a STORE-AND-FORWARD buffer;  
13 a transmit protocol block including logic for pulling data from said logical  
14 buffer when configured as a FIFO, for starting a timer that measures a fixed time interval  
15 when the DATA\_VALID signal is not asserted, and for asserting the ABANDON signal  
16 if the timer indicates that the fixed time interval has expired.

1 4. A system for implementing a speculative transmit function  
2 comprising:

3 a session block which responds to packet transmit requests and includes  
4 logic for requesting a logical buffer to buffer a transmit packet, for writing data to the  
5 logical buffer, and for sending a START signal to begin packet transmission;

6 a logical buffer;

7 a transmit buffer block, coupled to said session block and said logical  
8 buffer, for managing the buffer, including buffer writing circuitry and buffer  
9 configuration logic responsive to said START signal to configure the logical buffer as  
10 FIFO buffer, and asserting a DATA\_VALID signal when data has been loaded into the  
11 logical buffer and is ready to transmit, and responsive to an ABANDON signal to  
12 configure the logical buffer as a STORE-AND-FORWARD buffer;  
13 a transmit protocol block including logic for pulling data from said logical  
14 buffer when configured as a FIFO, and for asserting the ABANDON signal when the  
15 DATA\_VALID signal is not asserted.